**SLIDE 1: TITLE SLIDE**

**SLIDE 2: LEGISLATIVE HISTORY**

- **PURPA (1978)**

Enacted in response to the energy crises of the 1970s, PURPA was designed to reduce the nation's vulnerability to interruptions in its energy supply. This was to be achieved in several ways: 1) promoting increased energy conservation and efficiency programs; 2) increasing support for the development of renewable and alternative energy sources; 3) improving the wholesale distribution of electricity and the reliability of electric service; and 4) diversifying the sources of supply.

PURPA requires electric utilities to interconnect with and buy all capacity and energy offered from "qualifying facilities" (QFs) at the utility's own avoided cost rates. Two types of electric generators were eligible to become QFs under criteria established by FERC: small renewable power producers and cogenerators.

The intent in establishing qualifying facilities was to increase the available sources of electric supply, while at the same time promoting renewable and alternative energy. To encourage entry into the market, Congress exempted QFs from rate and accounting regulation by FERC, from regulation by the SEC under PUHCA, and from State rate, financial, and organizational regulation of utilities. This eliminated most of the regulatory and administrative burden which had previously rendered entry into the electricity market prohibitive for smaller entities. Most importantly, QFs were guaranteed a market for their power.

- **CLEAN AIR ACT (as amended in 1990)**

Electric utilities are major culprits for several air quality problems. Utilities are responsible for 27% of nitrogen oxide emissions, 2/3 of sulfur dioxide emissions, and over 1/3 of carbon emissions, and thus are a principle contributor to acid rain, smog, regional haze, mercury contamination, and global climate change.

The Clean Air Act was first enacted in 1970, and was the first comprehensive environmental statute passed by Congress. In response to impatience over the pace of air quality improvement, the Act underwent substantial modifications in 1977 and 1990.

The parts of the Act that matter most for renewables are those that cut emissions from electric power generation and provide a framework within which incentives for renewables can be added – Titles I, III, and IV. The 1990 amendments rely heavily on market-based control methods and pollution prevention strategies. All key titles of the amended law require or allow some form of emissions trading, marketable permit programs, emissions fees, or early reduction credits. These programs seek to increase economic efficiency by giving regulated industries greater flexibility to comply with anti-pollution regulations.

Most emissions trading mechanisms are based on a "cap," expressed as a limit on tons of pollutant that can be emitted in a given period. Regulators often grant permission to emit under an emission cap in the form of "allowances" which are distributed to or earned by the affected emissions sources on an annual basis. When emissions sources emit under their capped levels, they may sell their "excess" allowances to other emissions source operators.

Congress has both specifically and generally recognized the air pollution control potential of wind, geothermal, solar, and biomass technologies in existing and emerging emissions trading programs. Currently, however, there is not a procedure in place whereby renewable energy facilities (which do not emit pollutants) have allowances that they may sell or where a direct financial incentive exists for utilities to reduce emissions through energy conservation and renewables. Previous incentive programs and allowance set-aside programs have failed due to poor design and the ease with which utilities were able to meet emissions limits from more conventional energy sources.

However, it is important to recognize that these programs and their trading mechanisms are rapidly evolving, and there are opportunities for the renewables industry to influence these programs at the federal level. The framework is already in place – with a properly constructed system, emissions trading can provide a powerful financial incentive for renewables.

- **ENERGY POLICY ACT OF 1992**

The Energy Policy Act (EPAct) of 1992 was the most significant and comprehensive piece of energy legislation to emerge from Congress in the last decade, impacting nearly every producer and user of energy in the United States.

Among the purposes of the legislation was to increase the production and utilization of energy from renewable energy resources, to further research and development in renewable energy technologies, and to promote exports of U.S. renewable energy technologies and services.

This was to be achieved in several ways:

- Financial assistance for demonstration and commercial application projects
- International outreach activities -- including training programs, information dissemination, technology transfer programs
- Awards for advances in renewable technology development
- Establishment of an Interagency Working Group to coordinate the actions of the Federal Government with regard to renewables policy
- **Incentive payments and tax credit programs (to be discussed in more detail; next slide)**

## SLIDE 3: FINANCIAL INCENTIVES

The Energy Policy Act of 1992 contains several provisions that encourage investment in renewable energy technologies by private and public entities.

- **10% Business Investment Tax Credit**

This credit allows commercial entities to claim up to 10% of the investment or purchase and installation amount of **solar** property when filing their annual tax returns. Solar property consists of equipment which uses solar energy to generate electricity, to heat, cool, or provide hot water for use in a structure, or to provide process heat. It also includes storage and power conditioning devices.

- **Renewable Energy Production Tax Credit**

The Energy Policy Act established an incentive program whereby corporations, small businesses, and homeowners that generate electricity from **closed-loop biomass** (biomass grown exclusively for energy production) and **wind energy** are eligible to receive a Production Tax Credit for electricity sold during the 10 year period after the facility is placed into service. The PTC, currently 1.7¢/kWh, is adjusted annually for inflation. In November 1999, the PTC was extended for 30 months under an agreement reached during FY 2000 budget negotiations.

- **Modified Accelerated Cost Recovery System**

MACRS is designed to enable businesses to recover investments in **solar**, **wind**, and **geothermal** property through accelerated depreciation deductions. For property placed in service after 1986, the current MACRS class life for applicable renewable energy is five years.

- **Renewable Energy Production Incentive (REPI)**

Under EPAct, public (non-taxpaying) power facilities can apply for an incentive payment from DOE, equal to 1.5¢ for each kWh (adjusted annually for inflation) of electricity produced from **solar**, **wind**, **biomass** (excluding municipal solid waste), or **geothermal** energy. Payments are subject to appropriations by the Congress.

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**NOT LISTED ON SLIDE:** (not part of EPAct): The **Small Business Administration** operates a loan fund to assist small businesses engaged in energy technology and efficiency – including PV, solar thermal, biofuels, cogeneration, hydro, wind power.

## SLIDE 4: BROAD-BASED DOE INITIATIVES

DOE's Office of Power Technologies provides leadership for a wide variety of broad-based

crosscutting initiatives designed to facilitate the deployment of renewable energy technologies.

**SLIDE 5: BIOENERGY INITIATIVE**

The Bioenergy Initiative -- the result of an Executive Order signed by President Clinton in August 1999 -- is a national partnership to develop an integrated industry to produce power, fuels, and chemicals from crops, trees, and wastes, will help power America by using our most abundant natural resource - biomass. By making a "ton of biomass" a viable market competitor to a barrel of imported oil, bioenergy will help grow the U.S. economy, strengthen U.S. energy security, protect the environment, reduce greenhouse gas emissions, and revitalize rural America. Broad goals of initiative are listed on slide.

**SLIDE 6: GEOPOWERING THE WEST**

In January 2000, Secretary Richardson announced the GeoPowering the West initiative -- designed to expand the production and use of energy generated from heat within the earth. The initiative will build on current and future public and private sector efforts to bring geothermal heat and electricity to millions of homes and businesses in the Western U.S. The initiative supports the DOE plan to have 25,000 MW of wind, solar, geothermal, and biomass renewable power generating capacity online by 2010. 100 MW of geothermal energy is sufficient to meet the residential electricity needs of a city of 200,000 people.

In conjunction with the initiative, nearly $5 million in DOE grants were awarded for projects in six western states designed to support geothermal reservoir technology RD&D. Research is directed towards the domestic use and development of new technologies for geothermal reservoir exploration, characterization, and management.

Broad goals of initiative are listed on slide.

**SLIDE 7: MILLION SOLAR ROOFS**

The Million Solar Roofs Initiative will enable businesses and communities to install solar systems on one million rooftops across the United States by 2010. The Department of Energy will work with partners in the building industry, local governments, state agencies, the solar industry, electric service providers, and non-governmental organizations to remove market barriers and strengthen grassroots demand for solar technologies.
Key features of the initiative involve:

_ Developing a pool of existing federal lending and financing options
_ Soliciting voluntary participation by state and local governments and groups
_ Accelerating the use of solar energy systems on federal buildings
_ Leveraging other financial support and incentives, both current and proposed

Broad goals of initiative are listed on slide.

**SLIDE 8: WIND POWERING AMERICA**

With large untapped wind energy resources throughout the country and declining wind energy costs, the United States is now moving forward into the 21st century with an aggressive initiative to accelerate the progress of wind technology and further reduce its costs, to create new jobs, and to improve environmental quality.

Wind Powering America is a commitment to dramatically increase the use of wind energy in the United States. This initiative will establish new sources of income for American farmers, Native Americans, and other rural landowners, and meet the growing demand for clean sources of electricity. Through Wind Powering America, the United States will achieve targeted regional economic development, protect the local environment, reduce air pollution, lessen the risks of global climate change, and increase energy security.

**SLIDE 9: CLIMATE CHANGE TECHNOLOGY INITIATIVE (CCTI)**

The CCTI is a package of targeted tax incentives and investments aimed at increasing energy efficiency and spurring the broader use of renewable energy while also reducing greenhouse gas emissions.

The President's new budget proposes $4 billion in tax cuts over 5 years ($201 million for FY 2001) for consumers purchasing energy efficient products and for producers of energy from renewable sources. The budget also proposes $1.4 billion for Energy Efficiency and Clean Energy – this includes the budget for DOE/EERE programs in the four major carbon-emitting sectors of the economy – buildings, transportation, industry, and electricity.

[**NOTE: THESE ARE NOT ALL NEW PROGRAMS; THE CCTI CONSOLIDATES AND "PACKAGES" EXISTING PROGRAMS UNDER A CLIMATE CHANGE UMBRELLA.**]

**SLIDE 10: FY 2001 CCTI TAX INCENTIVES**

- **Clean Energy**

* Extension of current production tax credit (1.5¢/kWh adjusted for inflation) for electricity produced from wind and closed-loop biomass through July 1, 2004

* Expands 1.5¢/kWh tax credit to include certain open-loop biomass including some forest and agriculture-related resources for facilities placed in service from 2001-2005, and provides a 1.0¢/kWh credit for electricity produced from 2001-2003 for facilities placed in service prior to January 1, 2001.

* Adds a 0.5¢/kWh tax credit for electricity produced by co-firing biomass in coal plants

from 2001-2005

* Adds a 1.5¢/kWh tax credit for electricity produced from landfills not subject to EPA's 1996 New Source Performance Standards/Emission Guidelines (NSPS/EG), and a 1.0¢/kWh credit for landfills subject to NSPS/EG. Qualified facilities would be those placed in service after December 31, 2000 and before January 1, 2006.

- **Vehicles**

* Extension of current tax credit at its current maximum value (10% up to $4000) for qualified electric and fuel cell vehicles through 2006

- **Homes and Buildings**

* $1000-2000 credit toward the purchase of an energy-efficient home, one using 30-50% less energy than the 1998 International Energy Conservation Code (IECC) standard (2001-2003 or 2005)

* 20% tax credit (subject to a cap) for purchase of selected energy-efficient products for homes and commercial buildings – electric heat pump water heaters, natural gas heat pumps, and fuel cells (2001-2004)

* 15% tax credit for solar energy systems up to a cap of $1000 for solar water heating systems (2001-2005) and $2000 for rooftop PV systems (2001-2007)

* $500-3000 tax credit for hybrid vehicles purchased from 2003-2006, depending upon vehicle's design performance

## SLIDE 11: FEDERAL RESTRUCTURING LEGISLATION

While the main impetus for electric industry restructuring has taken place on the state level, there have been several attempts to pass comprehensive federal restructuring legislation that would help provide a degree of consistency to state efforts and shore up concerns about electric system reliability in a deregulated electricity marketplace.

Several bills have been introduced in the current Congress, and many include provisions relevant to renewable energy. It should be emphasized, however, that no legislation has yet been passed, the prospects for passage this session are at best uncertain, and there is no consensus that any final piece of legislation will contain provisions for renewable energy.

## SLIDE 12: RENEWABLES IN FEDERAL FACILITIES

As the owner or manager of more than 500,000 facilities, the U.S. government has an excellent opportunity to reduce fuel imports and improve environmental quality by using renewable sources of energy. In many Federal applications–such as irrigation, water heating, indoor and outdoor lighting, or communications–commercially available renewable technologies are often a cost-effective and environmentally friendly option for supplying the needed energy.

DOE's Federal Energy Management Program helps Federal agencies take advantage of the benefits offered by renewable technologies and apply the renewable provisions of EPAct and Executive Order 12902 (which mandates energy conservation/reductions in energy consumption at Federal facilities and requires agencies to increase use of renewables). FEMP's Renewable Energy Program educates Federal agencies about renewable opportunities and helps agencies implement successful renewable projects.